

UNITED STATES PATENT AND TRADEMARK OFFICE

Examiner: Group: Attorney Docket # 1925

Applicant(s) : CHASSOT, L., ET AL

Serial No. :

Filed :

For : 2-HYDROXY-5-AMINOBIIPHENYL DERIVATIVES
AND OXIDATIVE HAIR DYES CONTAINING THESE
COMPOUNDS

SIMULTANEOUS AMENDMENT

January 30, 2002

Honorable Commissioner of Patents and Trademarks
Washington, D.C. 20231

S I R S:

Simultaneously with filing of the above identified application
please amend the same as follows:

In the Claims:

Cancel all claims without prejudice.

Substitute the claims attached hereto.

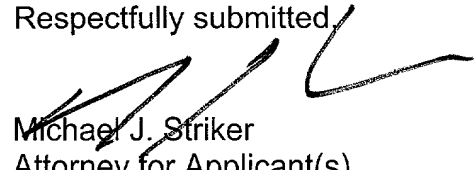
REMARKS:

This Amendment is submitted simultaneously with filing of the above identified
application.

With the present Amendment applicant has amended the claims so as to eliminate
their multiple dependency.

Consideration and allowance of the present application is most respectfully requested.

Respectfully submitted,

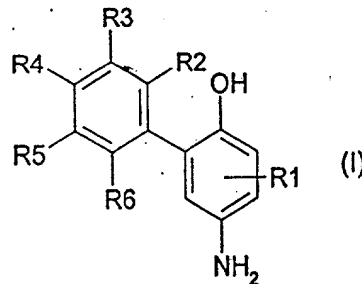


Michael J. Striker
Attorney for Applicant(s)
Reg. No. 27233

2008-03-04 14:00

PATENT CLAIMS

1. Colorants for oxidative dyeing of keratin fibers, particularly human hair, based on a developer-coupler combination, characterized in that it contains as the developer at least one 2-hydroxy-5-aminobiphenyl derivative of general formula (I) or a physiologically tolerated, water-soluble salt thereof



wherein

R1 denotes hydrogen, a halogen atom, a C₁-C₄-alkyl group, a C₁-C₄-hydroxyalkyl group, a C₁-C₄-alkoxy group or a C₁-C₄-hydroxyalkoxy group;

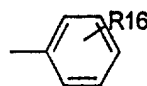
R2,R3,R4,R5,R6 can be equal or different and independently of each other denote hydrogen, a halogen atom, a cyano group, a hydroxy group, a C₁-C₄-alkoxy group, a C₁-C₄-hydroxyalkoxy group, a C₁-C₆-alkyl group, a C₁-C₄-alkyl thioether group, a mercapto group, a nitro group, an amino group, an alkylamino group, a dialkylamino group, a trifluoromethyl group, a -C(O)H group, a -C(O)CH₃ group, a -C(O)CF₃ group, an -Si(CH₃)₃ group, a C₁-C₄-hydroxyalkyl group, a C₃-C₄-dihydroxyalkyl group, a -CH=CHR₇ group, a -(CH₂)_p-CO₂R₈ group or a -(CH₂)_pR₉ with p = 1,2,3 or 4, a -C(R₁₀)=NR₁₁ or C(R₁₂)H-NR₁₃R₁₄ group, or two adjacent R₂ to R₆ groups form an -O-CH₂-O- bridge;

R7 denotes hydrogen, a hydroxyl group, a nitro group, an amino group, a -CO₂R₁₂ group or a -C(O)CH₃ group;

R8,R10 and R13 can be equal or different and independently of each other denote hydrogen or a C₁-C₄-alkyl group;

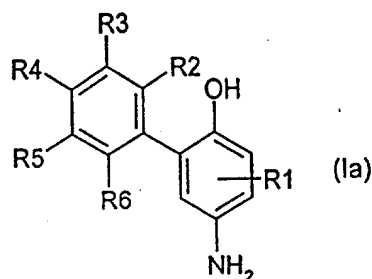
R9 denotes an amino group or a nitrile group;

R11, R14 and R15 can be equal or different and independently of each other denote hydrogen, a hydroxyl group, a C₁-C₄-alkyl group, a C₁-C₄-hydroxyalkyl group, a C₃-C₄-dihydroxyalkyl group or a radical of formula



R12 denotes hydrogen, an amino group or a hydroxyl group, provided that the compound of formula (I) does not present a center of symmetry.

2. Colorant according to Claim 1, characterized in that **R1** denotes hydrogen.
3. Colorant according to Claim 1 [or 2] characterized in that **R1** denotes hydrogen and four of the **R2** to **R6** groups denote hydrogen while the fifth group is hydrogen, a methyl group, an amino group, a hydroxyl group, a methoxy group, a C₁-C₄-hydroxyalkyl group or a C₁-C₄-hydroxyalkoxy group.
4. Colorant according to Claim 1 [or 2] characterized in that all **R1** to **R6** groups denote hydrogen at the same time.
5. Colorant according to Claim 1, characterized in that four of groups **R2** to **R6** are hydrogen while the fifth group is hydrogen, a methyl group, an amino group, a hydroxyl group, a methoxy group, a C₁-C₄-hydroxyalkyl group or a C₁-C₄-hydroxyalkoxy group.
6. Colorant according to [one of Claims 1 to 5] characterized in that the 2-hydroxy-5-aminobiphenyl derivative of formula (I) is selected from among 2-hydroxy-5-aminobiphenyl, 2,4'-dihydroxy-5-aminobiphenyl, 2-hydroxy-5-amino-4'-(2"-hydroxyethoxy)biphenyl, 2,4'-dihydroxy-5-amino-2'-methylbiphenyl, 2-hydroxy-5-amino-4'-(2"-hydroxyethyl)biphenyl, 2-hydroxy-5,4'-diaminobiphenyl or a physiologically tolerated salt thereof.
7. Colorant according to [one of Claims 1 to 6] characterized in that it contains the 2-hydroxy-5-aminobiphenyl derivative of formula (I) in an amount from 0.005 to 20.0 wt%.
8. Colorant according to [one of Claims 1 to 7] characterized in that it has a pH of 6.5 to 11.5.
9. 2-Hydroxy-5-aminobiphenyl derivatives of formula (Ia) or a physiologically tolerated, water-soluble salt thereof



wherein

R1 denotes hydrogen, a halogen atom, a C₁-C₄-alkyl group, a C₁-C₄-hydroxyalkyl group, a C₁-C₄-alkoxy group or a C₁-C₄-hydroxyalkoxy group;

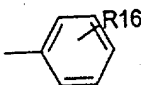
R2, R3, R4, R5, R6 can be equal or different and independently of each other denote hydrogen, a halogen atom, a cyano group, a hydroxyl group, a C₁-C₄-alkoxy group, a C₁-C₄-hydroxyalkoxy group, a C₁-C₆-alkyl group, a C₁-C₄-alkyl thioether group, a mercapto group, a nitro group, an amino group, an alkylamino group, a dialkylamino group, a trifluoromethyl group, a -C(O)H group, a -C(O)CH₃ group, a -C(O)CF₃ group, an -Si(CH₃)₃ group, a C₁-C₄-hydroxyalkyl group, a C₃-C₄-dihydroxyalkyl group, a -CH=CHR₇ group, a -(CH₂)_p-CO₂R₈ group or a -(CH₂)_p-R₉ group with p = 1, 2, 3 or 4, a -C(R₁₀)=NR₁₁ group or a C(R₁₂)H-NR₁₃R₁₄ group, or two adjacent R₂ to R₆ groups form an -O-CH₂-O- bridge;

R7 denotes hydrogen, a hydroxyl group, a nitro group, an amino group, a CO₂R₁₂ group, or a -C(O)CH₃ group;

R8, R10 and R13 can be equal or different and independently of each other denote hydrogen or a C₁-C₄-alkyl group;

R9 denotes an amino or nitrile group;

R11, R14 and R15 can be equal or different and independently of each other denote hydrogen, a hydroxyl group, a C₁-C₄-alkyl group, a C₁-C₄-hydroxyalkyl group, a C₃-C₄-dihydroxyalkyl group or a radical of formula

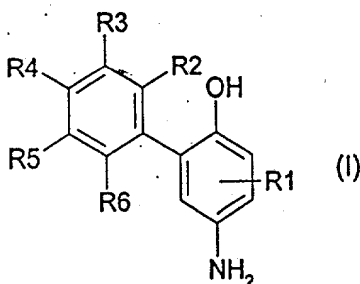


R12 denotes hydrogen, an amino group or a hydroxyl group,

provided that the compound of formula (I) has no center of symmetry and that the R₂ group does not denote hydrogen or a hydroxyl group.

PATENT CLAIMS

1. Colorants for oxidative dyeing of keratin fibers, particularly human hair, based on a developer-coupler combination, characterized in that it contains as the developer at least one 2-hydroxy-5-aminobiphenyl derivative of general formula (I) or a physiologically tolerated, water-soluble salt thereof



wherein

R1 denotes hydrogen, a halogen atom, a C₁-C₄-alkyl group, a C₁-C₄-hydroxyalkyl group, a C₁-C₄-alkoxy group or a C₁-C₄-hydroxyalkoxy group;

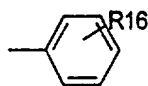
R2, R3, R4, R5, R6 can be equal or different and independently of each other denote hydrogen, a halogen atom, a cyano group, a hydroxy group, a C₁-C₄-alkoxy group, a C₁-C₄-hydroxyalkoxy group, a C₁-C₆-alkyl group, a C₁-C₄-alkyl thioether group, a mercapto group, a nitro group, an amino group, an alkylamino group, a dialkylamino group, a trifluoromethyl group, a -C(O)H group, a -C(O)CH₃ group, a -C(O)CF₃ group, an -Si(CH₃)₃ group, a C₁-C₄-hydroxyalkyl group, a C₃-C₄-dihydroxyalkyl group, a -CH=CHR₇ group, a -(CH₂)_p-CO₂R₈ group or a -(CH₂)_pR₉ with p = 1, 2, 3 or 4, a -C(R₁₀)=NR₁₁ or C(R₁₂)H-NR₁₃R₁₄ group, or two adjacent R₂ to R₆ groups form an -O-CH₂-O- bridge;

R7 denotes hydrogen, a hydroxyl group, a nitro group, an amino group, a -CO₂R₁₂ group or a -C(O)CH₃ group;

R8, R10 and R13 can be equal or different and independently of each other denote hydrogen or a C₁-C₄-alkyl group;

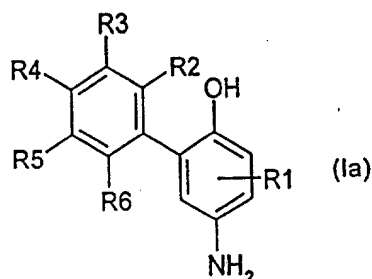
R9 denotes an amino group or a nitrile group;

R11, R14 and R15 can be equal or different and independently of each other denote hydrogen, a hydroxyl group, a C₁-C₄-alkyl group, a C₁-C₄-hydroxyalkyl group, a C₃-C₄-dihydroxyalkyl group or a radical of formula



R12 denotes hydrogen, an amino group or a hydroxyl group, provided that the compound of formula (I) does not present a center of symmetry.

2. Colorant according to Claim 1, characterized in that **R1** denotes hydrogen.
3. Colorant according to Claim 1 characterized in that **R1** denotes hydrogen and four of the **R2** to **R6** groups denote hydrogen while the fifth group is hydrogen, a methyl group, an amino group, a hydroxyl group, a methoxy group, a C_1 - C_4 -hydroxyalkyl group or a C_1 - C_4 -hydroxyalkoxy group.
4. Colorant according to Claim 1, characterized in that all **R1** to **R6** groups denote hydrogen at the same time.
5. Colorant according to Claim 1, characterized in that four of groups **R2** to **R6** are hydrogen while the fifth group is hydrogen, a methyl group, an amino group, a hydroxyl group, a methoxy group, a C_1 - C_4 -hydroxyalkyl group or a C_1 - C_4 -hydroxyalkoxy group.
6. Colorant according to Claim 1, characterized in that the 2-hydroxy-5-aminobiphenyl derivative of formula (I) is selected from among 2-hydroxy-5-aminobiphenyl, 2,4'-dihydroxy-5-aminobiphenyl, 2-hydroxy-5-amino-4'-(2"-hydroxyethoxy)biphenyl, 2,4'-dihydroxy-5-amino-2'-methylbiphenyl, 2-hydroxy-5-amino-4'-(2"-hydroxyethyl)biphenyl, 2-hydroxy-5,4'-diaminobiphenyl or a physiologically tolerated salt thereof.
7. Colorant according to Claim 1, characterized in that it contains the 2-hydroxy-5-aminobiphenyl derivative of formula (I) in an amount from 0.005 to 20.0 wt%.
8. Colorant according to Claim 1, characterized in that it has a pH of 6.5 to 11.5.
9. 2-Hydroxy-5-aminobiphenyl derivatives of formula (Ia) or a physiologically tolerated, water-soluble salt thereof



wherein

R1 denotes hydrogen, a halogen atom, a C_1 - C_4 -alkyl group, a C_1 - C_4 -hydroxyalkyl group, a C_1 - C_4 -alkoxy group or a C_1 - C_4 -hydroxyalkoxy group;

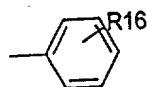
R2, R3, R4, R5, R6 can be equal or different and independently of each other denote hydrogen, a halogen atom, a cyano group, a hydroxyl group, a C_1 - C_4 -alkoxy group, a C_1 - C_4 -hydroxyalkoxy group, a C_1 - C_6 -alkyl group, a C_1 - C_4 -alkyl thioether group, a mercapto group, a nitro group, an amino group, an alkylamino group, a dialkylamino group, a trifluoromethyl group, a $-C(O)H$ group, a $-C(O)CH_3$ group, a $-C(O)CF_3$ group, an $-Si(CH_3)_3$ group, a C_1 - C_4 -hydroxyalkyl group, a C_3 - C_4 -dihydroxyalkyl group, a $-CH=CHR_7$ group, a $-(CH_2)_p-CO_2R_8$ group or a $-(CH_2)_p-R_9$ group with $p = 1, 2, 3$ or 4 , a $-C(R_{10})=NR_{11}$ group or a $C(R_{12})H-NR_{13}R_{14}$ group, or two adjacent **R2** to **R6** groups form an $-O-CH_2-O-$ bridge;

R7 denotes hydrogen, a hydroxyl group, a nitro group, an amino group, a CO_2R_{12} group, or a $-C(O)CH_3$ group;

R8, R10 and **R13** can be equal or different and independently of each other denote hydrogen or a C_1 - C_4 -alkyl group;

R9 denotes an amino or nitrile group;

R11, R14 and **R15** can be equal or different and independently of each other denote hydrogen, a hydroxyl group, a C_1 - C_4 -alkyl group, a C_1 - C_4 -hydroxyalkyl group, a C_3 - C_4 -dihydroxyalkyl group or a radical of formula



R12 denotes hydrogen, an amino group or a hydroxyl group,

provided that the compound of formula (I) has no center of symmetry and that the **R2** group does not denote hydrogen or a hydroxyl group.



Chemical Translations



DR. S. EDMUND BERGER

298 GRAYTON ROAD, TONAWANDA, N.Y. 14150

VOICE (716) 832-7316
FAX (716) 833-1970
e-mail: bbseb@att.net

CERTIFICATE OF ACCURACY

State of New York

} ss.

County of Erie

German

TRANSLATION FROM _____

On this day, I **S. Edmund Berger** state:

German

that I am a professional translator of the _____ and English languages,
doing business as *Chemical Translations*, 298 Grayton Road, Tonawanda, NY 14150;

that I am thoroughly familiar with these languages and have carefully made and/or verified the
attached translation from the original document

New PCT Application
PCT/EP 01/02704
Inv.: Chassot, L., et al.
Ref.: 1925

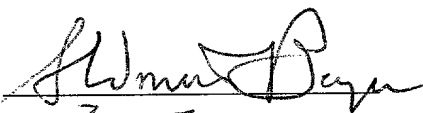
2-HYDROXY-5-AMINOBIPHENYL DERIVATIVES AND OXIDATIVE DYES CONTAINING THESE COMPOUNDS

as submitted to me in the

German

_____ language;

and that the said translation is a true, complete and correct English version of such original
to the best of my knowledge and belief.


Jan. 5, 2002